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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Tony M. Brewer

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NATH & ASSOCIATES

112 South West Street

Alexandria, VA 22314

EXAMINER

SAM, PHIRIN

ART UNIT

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2619

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/703,038	Applicant(s) BREWER ET AL.	
	Examiner Phirin Sam	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 63-88 and 90-125 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 108 and 109 is/are allowed.
- 6) ☒ Claim(s) 63,78,79,85-88,101,103,110-112,114-120,124 and 125 is/are rejected.
- 7) ☒ Claim(s) 64-77,80-84,90-95,97-100,102,104-107,113 and 121-123 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 63, 78, 79, 85, 86, and 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,839,322 (hereinafter referred as “Ashwood”) in view of US Patent 6,970,648 (hereinafter referred as “Ofek”).

Regarding claim 63, Ashwood discloses a method of passing Internet Protocol (IP) data packets through a network, said method comprising:

- (a) constructing a chunk as a substantially fixed quantity of data with a payload that is sized to fit more than one of said data packets (see Figs. 2a and 2b, col. 5, lines 47-61);
- (b) filling said payload of said chunk with a portion of at least one data packet (see Figs. 2a-3, col. 6, lines 60-67, col. 7, lines 1-16, and col. 8, lines 3-21);

(c) converting said chunk from electrical information into optical information (see Fig. 3, col. 7, lines 34-39, 47-50);

Ashwood does not disclose an optical switch fabric and a framing symbol in each said chunk. However, Ofek discloses or suggest the optical switch fabric and the framing symbol (see Fig. 4, col. 15, lines 59-67, and col. 22, lines 2-18). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the optical switch fabric and the framing symbol teaching by Ofek with Ashwood. The motivation for doing so would have been to provide a unique path to a prompt deployment and utilization of such dynamic optical components read on column 8, lines 11-14. Therefore, it would have been obvious to combine Ofek and Ashwood to obtain the invention as specified in the claim 63.

Regarding claim 78, Ashwood discloses formatting said chunk to include adding a chunk header (see Figs. 2a and 2b, col. 5, lines 47-67).

Regarding claim 79, Ashwood does not disclose the chunk header includes identification of chunk type. However, Ofek discloses the chunk header includes identification of chunk type (see Fig. 14, col. 46, lines 55-57, and col. 47, lines 1-7). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the chunk header includes identification of chunk type teaching by Ofek with Ashwood. The motivation for doing so would have been to provide a unique path to a prompt deployment and utilization of such dynamic optical components read on column 8, lines 11-14. Therefore, it would have been obvious to combine Ofek and Ashwood to obtain the invention as specified in the claim 79.

Regarding claim 85, Ashwood discloses the chunk has a length of approximately 400 bytes (see Fig. 2a and 2b, col. 7, lines 8-9, wherein the frame or chunk is a design choice).

Regarding claim 86, Ashwood discloses the chunk contains multiple data packets (see Figs. 2a and 2b, col. 7, lines 8-21).

Regarding claim 87, Ashwood discloses the sized chunk contains a segment of a data packet, said data packet having a length greater than the size of said chunk (see Figs. 2a and 2b, col. 7, lines 4-16).

4. Claims 88, 96, 101, 103, 110-112, 114-120, 124, and 125 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,335,992 (hereinafter referred as “Bala”) in view of US Patent 6,839,322 (hereinafter referred as “Ashwood”).

Regarding claim 88, Bala discloses an Internet Protocol (IP) packet router system (see Fig. 1a, col. 4, lines 43-51), said system comprising:

- (a) an IP packet router (see Fig. 5c), including:
- (b) an optical switch fabric through which said chunk passes (see Fig. 5c, element 120, col. 11, lines 35-37);
- (c) a first electrical switch stage at an input side of said optical switch fabric and a second electrical switch stage at an output side of said switch fabric (see Fig. 5c, elements 110, 120, and 130, col. 11, lines 29-67, and col. 12, lines 1-21);
- (d) wherein said first electrical switch stage is operable to construct said chunk, and said second electrical switch stage is operable to strip said data packets from said chunk (see Fig. 5c, col. 11, lines 19-67, and col. 12, lines 1-67);

Bala does not disclose at least one chunk having a payload comprising a plurality of data packets and a framing symbol. However, Ashwood discloses at least one chunk having a payload comprising a plurality of data packets and a framing symbol (see Figs. 2a and 2b, col. 5, lines 47-

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67, and col. 6, lines 1-3). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine chunk having a payload comprising a plurality of data packets and a framing symbol teaching by Ashwood with Bala. The motivation for doing so would have been to provide to facilitate full optical routing of IP packets, which naturally vary widely in length, using optical routing equipment to accommodate fixed-length data packets read on column 4, lines 60-64. Therefore, it would have been obvious to combine Ashwood and Bala to obtain the invention as specified in the claim 88.

Regarding claim 96, Bala discloses an Internet Protocol (IP) packet router system, said system comprising:

- (a) an IP packet router (see Figs. 1a and 5c, col. 4, lines 43-45), including:
 - (a1) an optical switch fabric through which chunk passes (see Fig. 5c, col. 12, lines 11-21);
 - (a2) a first electrical switch stage at an input side of said optical switch fabric and a second electrical switch stage at an output side of said switch fabric (see Fig. 5c, elements 141, 120, 130, col. 11, lines 19-22);

Bala does not disclose at least one chunk having a payload comprising a plurality of data packets and a framing symbol and wherein each said chunk is formatted to include a preamble, said preamble containing information configured to allow alignment of router clock and data recovery circuitry. However, Ashwood discloses at least one chunk having a payload comprising a plurality of data packets and a framing symbol and wherein each said chunk is formatted to include a preamble, said preamble containing information configured to allow alignment of router clock and data recovery circuitry (see Figs. 2a and 2b, col. 5, lines 47-50, col. 6, lines 40-44, and col. 7, lines 4-28). At the time of the invention, it would have been obvious to a person

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of ordinary skill in the art to combine one chunk having a payload comprising a plurality of data packets and a framing symbol and information configured to allow alignment of router clock teaching by Ashwood with Bala. The motivation for doing so would have been to provide to enable full optical routing of variable length packetized data across an optical communications network read on column 2, lines 66-67. Therefore, it would have been obvious to combine Ashwood and Bala to obtain the invention as specified in the claim 96.

Regarding claim 101, Bala does not disclose each said chunk is formatted to include a chunk header. However, Ashwood discloses chunk header (see Figs. 2a and 2b, col. 5, lines 47-67). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine chunk header teaching by Ashwood with Bala. The motivation for doing so would have been to provide to enable full optical routing of variable length packetized data across an optical communications network read on column 2, lines 66-67. Therefore, it would have been obvious to combine Ashwood and Bala to obtain the invention as specified in the claim 101.

Regarding claim 103, Bala discloses the optical switch fabric is partitioned into a plurality of working sub-planes (see Fig. 2, col. 7, lines 19-35).

Regarding claim 110, Bala discloses an Internet Protocol (IP) packet router system, said system comprising:

- (a) an IP packet router (see Figs. 1a and 5c, col. 4, lines 43-45), including:
 - (a1) an optical switch fabric through which chunk passes (see Fig. 5c, col. 12, lines 11-21);
 - (a2) a first electrical switch stage at an input side of said optical switch fabric and a second electrical switch stage at an output side of said switch fabric (see Fig. 5c, elements 141, 120, 130, col. 11, lines 19-22);

Bala does not disclose at least one chunk having a payload comprising a plurality of data packets and a framing symbol; wherein said payload of said at least one chunk further comprises at least one packet segment and an associated packet header; and wherein said at least one packet segment is selected from the group consisting of portions of packets that are larger than said chunk payload, portions of packets that are equal in size to said chunk payload, and portions of packets that are smaller in size than said chunk payload. However, Ashwood discloses at least one chunk having a payload comprising a plurality of data packets and a framing symbol (see Figs. 2a and 2b, col. 5, lines 47-50); wherein said payload of said at least one chunk further comprises at least one packet segment and an associated packet header (see Figs. 2a and 2b, col. 6, lines 36-44); and wherein said at least one packet segment is selected from the group consisting of portions of packets that are larger than said chunk payload, portions of packets that are equal in size to said chunk payload, and portions of packets that are smaller in size than said chunk payload (see Figs. 2a and 2b, col. 6, lines 36-62). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine one chunk having a payload comprising a plurality of data packets and a framing symbol; said payload of said at least one chunk further comprises at least one packet segment and an associated packet header; and one packet segment is selected from the group consisting of portions of packets that are larger than said chunk payload, portions of packets that are equal in size to said chunk payload, and portions of packets that are smaller in size than said chunk payload teaching by Ashwood with Bala. The motivation for doing so would have been to provide to enable full optical routing of variable length packetized data across an optical communications network read on column 2, lines 66-67.

Therefore, it would have been obvious to combine Ashwood and Bala to obtain the invention as specified in the claim 110.

Regarding claim 111, Bala discloses the switch fabric comprises a plurality of optical switch planes (see Figs. 2-4, col. 7, lines 20-59, and col. 8, lines 28-39).

Regarding claim 112, Bala discloses a method of information flow through an IP packet network system, said method comprising:

- (a) electrically switching said chunks to be sent to an appropriate optical switch plane; converting said chunks into optical signals (see Fig. 5c, col. 11, lines 19-26);
- (b) directing said chunks through said appropriate optical switch plane toward a plurality of destination ports (see Fig. 5c, col. 11, lines 30-67);

Bala does not disclose encapsulating input data packets from a plurality of source ports into substantially fixed sized chunks, wherein said input data packets are electrical signals; and encapsulating input data packets from a plurality of source ports into substantially fixed sized chunks, wherein said input data packets are electrical signals. However, Ashwood discloses encapsulating input data packets from a plurality of source ports into substantially fixed sized chunks, wherein said input data packets are electrical signals (see Figs. , col. 5, lines 47-50, and col. 6, lines 38-49); and formatting overhead information onto each of said chunks, said overhead including a framing symbol (see Figs. 2a and 2b, col. 5, lines 59-67, and col. 6, lines 1-4, 33-38). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine encapsulating input data packets into substantially fixed sized chunks and formatting overhead information onto each of said chunks teaching by Ashwood with Bala. The motivation for doing so would have been to provide enable full optical routing of variable length

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packetized data across an optical communications network read on column 2, lines 66-67.

Therefore, it would have been obvious to combine Ashwood and Bala to obtain the invention as specified in the claim 112.

Regarding claims 114 and 115, Bala does not disclose all information flows through said switch plane in said substantially fixed sized chunks and formatting said chunks to include adding a chunk header. However, Ashwood discloses all information flows through said switch plane in said substantially fixed sized chunks and formatting said chunks to include adding a chunk header (see Figs. 2a and 2b, col. 5, lines 47-67, and col. 7, lines 8-16). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine all information flows through said switch plane in said substantially fixed sized chunks and formatting said chunks to include adding a chunk header teaching by Ashwood with Bala. The motivation for doing so would have been to provide enable full optical routing of variable length packetized data across an optical communications network read on column 2, lines 66-67. Therefore, it would have been obvious to combine Ashwood and Bala to obtain the invention as specified in the claims 114 and 115.

Regarding claim 116, Bala discloses said appropriate switch plane is one of a plurality of subplanes comprising a partitioned switch fabric (see Fig. 5c, col. 11, lines 19-67, and col. 12, lines 1-21).

Regarding claim 117, Bala does not disclose said chunk header includes identification of a specific routing subplane through said switch fabric. However, Ashwood discloses said chunk header includes identification of a specific routing subplane through said switch fabric (see Figs. 2a and 2b, col. , lines 59-67, and col. 6, lines 1-44). At the time of the invention, it would have

been obvious to a person of ordinary skill in the art to combine said chunk header includes identification of a specific routing subplane through said switch fabric teaching by Ashwood with Bala. The motivation for doing so would have been to provide enable full optical routing of variable length packetized data across an optical communications network read on column 2, lines 66-67. Therefore, it would have been obvious to combine Ashwood and Bala to obtain the invention as specified in the claim 117.

Regarding claim 118, Bala does not disclose said directing comprises using said identification in said chunk header of a specific routing subplane to route said chunks through said switch fabric. However, Ashwood discloses said directing comprises using said identification in said chunk header of a specific routing subplane to route said chunks through said switch fabric (see Figs. 2a and 2b, col. 5, lines 59-67, and col. 6, lines 1-44). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine directing comprises using said identification in said chunk header of a specific routing subplane to route said chunks through said switch fabric teaching by Ashwood with Bala. The motivation for doing so would have been to provide enable full optical routing of variable length packetized data across an optical communications network read on column 2, lines 66-67. Therefore, it would have been obvious to combine Ashwood and Bala to obtain the invention as specified in the claim 118.

Regarding claim 119, Bala discloses said chunk header includes identification of an input of said appropriate optical switch plane and an output of said appropriate optical switch plane for said chunk. However, Ashwood discloses said chunk header includes identification of an input of said appropriate optical switch plane and an output of said appropriate optical switch

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plane for said chunk (see Figs. 2a and 2b, col. 5, lines 59-67). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine said chunk header includes identification of an input of said appropriate optical switch plane and an output of said appropriate optical switch plane for said chunk teaching by Ashwood with Bala. The motivation for doing so would have been to provide enable full optical routing of variable length packetized data across an optical communications network read on column 2, lines 66-67. Therefore, it would have been obvious to combine Ashwood and Bala to obtain the invention as specified in the claim 119.

Regarding claim 120, Bala does not disclose said directing comprises using said identification in said chunk header of said input and said output to route said chunks through said optical switch plane. However, Ashwood discloses said directing comprises using said identification in said chunk header of said input and said output to route said chunks through said optical switch plane (see Figs. 2a and 2b, col. 5, lines 59-67). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine said directing comprises using said identification in said chunk header of said input and said output to route said chunks through said optical switch plane teaching by Ashwood with Bala. The motivation for doing so would have been to provide enable full optical routing of variable length packetized data across an optical communications network read on column 2, lines 66-67. Therefore, it would have been obvious to combine Ashwood and Bala to obtain the invention as specified in the claim 120.

Regarding claim 124, Bala discloses said optical switch plane is part of an optical switch fabric (see Fig. 5c, col. 11, lines 19-67, and col. 12, lines 1-21).

Regarding claim 125, Bala does not disclose said electrically switching comprises using said framing symbol in each said chunk to determine uniquely within a stream of bits a beginning and a trailing end of each said chunk. However, Ashwood discloses said electrically switching comprises using said framing symbol in each said chunk to determine uniquely within a stream of bits a beginning and a trailing end of each said chunk (see Figs. 2a and 2b, col. 5, lines 59-67, and col. 6, lines 1-38). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine said electrically switching comprises using said framing symbol in each said chunk to determine uniquely within a stream of bits a beginning and a trailing end of each said chunk teaching by Ashwood with Bala. The motivation for doing so would have been to provide enable full optical routing of variable length packetized data across an optical communications network read on column 2, lines 66-67. Therefore, it would have been obvious to combine Ashwood and Bala to obtain the invention as specified in claim 125.

Allowable Subject Matter

5. Claims 64-77, 80-84, 90-95, 97-100, 102, 104-107, 113, and 121-123 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 108 and 109 are allowed.

Response to Remarks

7. Applicant's remarks with respect to claims above have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phirin Sam whose telephone number is (571) 272-3082. The examiner can normally be reached on Increased Flexitime Policy (IFP) Program.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272 - 2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Respectfully submitted,

Date: July 28, 2008

By: /Phirin Sam/

Phirin Sam
Primary Examiner
Art Unit 2619